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EXAMINER

CONTINO, PAUL F

ART UNIT	PAPER NUMBER
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2114

DATE MAILED: 04/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/072,140

Applicant(s)

LAUTERBACH ET AL.

Examiner

Paul Contino

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see page 15 third paragraph, filed February 16, 2005, with respect to the Abstract have been fully considered and are persuasive. The objection of the Abstract of February 2, 2002, has been withdrawn.
2. Applicant's arguments, see page 15 fourth paragraph, filed February 16, 2005, with respect to claim 9 has been fully considered and are persuasive. The rejection under 35 USC 112 of claim 9 of February 2, 2002, has been withdrawn.
3. Applicant's arguments filed February 16, 2005, with respect to the 35 USC 112 rejection of claim 34 have been fully considered but they are not persuasive. Claim 34 is now dependent on itself.
4. Applicant's arguments on pages 16-19 regarding the 102(e) and 103(a) rejections filed February 16, 2005, have been fully considered but they are not persuasive.

Examiner respectfully disagrees with Applicant's arguments on pages 16-19 regarding lack of prior art teaching a removable nonvolatile memory device. It is well-known to one skilled in the art that in general practice a ROM memory device such as that disclosed by Orr

may be removable in order to facilitate, for example, the upgrading of memory by switching of ROM memory devices.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 34 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 34 recites the limitation "the separate storage medium" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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6. Claims 1, 5, 7, 9-12, 16, 19, 24-27, and 30-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Orr (U.S. Patent No. 6,189,114).

As in claim 1, Orr discloses a file server system (column 4 lines 32-34) comprising:
a storage operating system adapted to be executed by the processor (column 5 lines 5-9);
a removable nonvolatile memory device coupled to the system bus, the removable nonvolatile memory device containing diagnostics code for the system (column 5 lines 14-15 and 21-23, where it is possible to remove the memory); and
a set of boot instructions resident in the file server system including instructions for executing a normal boot routine upon a power-on of the system (Fig. 2, column 5 lines 17-19), and including instructions enabling the processor to identify the removable nonvolatile memory device and to load the diagnostics code into the memory in response to a command to execute a diagnostics boot routine instead of the normal boot routine (column 5 lines 56-59).

As in claim 5, Orr discloses a storage adapter coupled to the system bus (column 5 lines 2-4); and
at least one storage disk coupled to the storage adapter and containing files served by the operating system (column 5 lines 2-4).

As in claim 7, Orr discloses a motherboard upon which the processor, the memory and the set of boot instructions reside (Fig. 1 #44, column 4 line 66 through column 5 line 1, where system unit 44 may be interpreted as a motherboard).

As in claim 9, Orr discloses said diagnostic code includes code relating to the diagnostics of hardware devices including the processor, the memory, the buses, the adapters, the disks, a compact flash and interfaces thereof (Fig 2, column 5 lines 35-43).

As in claim 10, Orr discloses boot instructions reside in firmware (column 5 lines 14-15).

As in claim 11, Orr discloses a method of performing diagnostics in a filer system comprising the steps of:

providing a removable nonvolatile memory device interfaced with the motherboard, the removable nonvolatile memory device being identifiable to the processor (column 5 lines 14-15 and 21-23, where it is possible to remove the memory);

dividing the removable nonvolatile memory device into separate partitions (Fig. 2, column 5 lines 14-31);

storing a set of diagnostics instructions, being a diagnostics code, in one of the partitions of the removable nonvolatile memory device (column 5 lines 21-24); and

programming the system firmware to recognize a user implemented command for a diagnostics boot such that in response to the diagnostics boot command, the firmware loads the diagnostics code residing in the removable nonvolatile memory device into the memory to execute a diagnostic boot routine instead of a normal boot routine (column 5 lines 56-59).

As in claim 12, Orr discloses maintaining, in a separate partition of the nonvolatile memory, a maintenance log into which test results and data about the storage system are stored (test results: column 7 lines 25-27; data: column 5 line 34).

As in claim 16, Orr discloses a storage system for a computer configured to implement a file system comprising:

means for storing a set of diagnostics instructions comprising diagnostics code, in a removable nonvolatile memory device coupled to the system bus, the removable nonvolatile memory device being identifiable to the system (column 5 lines 14-15 and 21-24, where it is possible to remove the memory); and

means for executing the diagnostics code in response to a diagnostics boot command received by system firmware (column 5 lines 56-59).

As in claim 19, Orr discloses a computer-readable medium comprising:

initiating a power-on self test when the computer is powered-on (column 5 lines 18-19);

identifying devices present in the computer (column 5 lines 19-31);

in response to a successful power-on self test, commencing a normal boot routine (column 5 line 56 through column 6 line 5);

recognizing a command for a diagnostics boot (column 5 lines 56-67);

in response to the diagnostics boot command, probing devices to locate a removable nonvolatile memory device (column 5 lines 14-15 and 21-24, where it is possible to remove the memory) containing diagnostic boot instructions (column 5 line 56 through column 6 line 5); and

interrupting the normal boot routine and executing the diagnostics code for a diagnostics boot for the computer (column 5 line 56 through column 6 line 5).

As in claim 24, Orr discloses a removable nonvolatile memory device interconnected with the storage system, wherein the removable nonvolatile memory device (column 5 lines 14-15 and 21-24, where it is possible to remove the memory) containing boot diagnostic code that is loadable into the storage system as an alternative to a normal boot routine (column 5 line 32 through column 6 line 5, where the “storage system” is comprised of system RAM 48 which the diagnostic code may be “loaded” into).

As in claim 25, Orr discloses the removable nonvolatile memory further comprises a plurality of partitions (Fig. 2, column 5 lines 14-31).

As in claim 26, Orr discloses the boot diagnostic code is contained within a first partition of the plurality of partitions (Fig. 2, column 5 lines 14-31).

As in claim 27, Orr discloses the removable nonvolatile memory device further comprises a second partition, the second partition storing a diagnostic log (test results: column 7 lines 25-27; data: column 5 line 34; the test result and data storage are interpreted as a “log”).

As in claim 30, Orr discloses a firmware boot routine (Fig. 2, column 5 lines 17-19), the firmware boot routine having a process for selecting between execution of either a normal boot routing or a diagnostic boot routine (column 5 line 56 through column 6 line 5).

As in claim 31, Orr discloses a file system for a computer comprising:

a storage operating system adapted to be executed by the processor (column 5 lines 5-9);

a removable nonvolatile memory device coupled to the system bus, the removable nonvolatile memory device containing diagnostics code for the system (column 5 lines 14-15 and 21-23, where it is possible to remove the memory), the removable nonvolatile memory device also divided into a plurality of partitions with the diagnostics code residing in at least one of the partitions (Fig. 2, column 5 lines 14-31); and

a set of boot instructions resident in the filer server system including instructions for executing a normal boot routine upon a power-on of the system (Fig. 2, column 5 lines 17-19), and including instructions enabling the processor to identify the removable nonvolatile memory device and to load the diagnostics code into the memory in response to a command to execute a diagnostics boot routine instead of the normal boot routine (column 5 lines 56-59).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2-4, 8, 13-15, 17-18, 20-23, 28-29, and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Orr in view of Aguilar et al. (U.S. Patent No. 6,785,807).

As in claim 2, Orr teaches the limitations of claim 1 which included nonvolatile memory being divided into a plurality of partitions. However, Orr fails to teach that the nonvolatile memory device is a compact flash. Aguilar teaches of a compact flash (column 4 lines 58-67).

It would have been obvious to a person skilled in the art at the time the invention was made to have replaced the ROM component of Orr with the compact flash component of Aguilar et al. This would have been obvious because Aguilar et al. discloses replacing ROM with compact flash (column 4 lines 63-65).

As in claim 3, Orr discloses a partition of the nonvolatile memory is designated as a maintenance log into which test results and data are stored (test results: column 7 lines 25-27; data: column 5 line 34).

As in claim 4, Orr discloses an input/output device coupled to the system bus, and which input/output device is identifiable by the processor (Fig. 1 #56); and

Aguilar et al. discloses a second bus coupled between the input/output device and the compact flash (Fig. 1 #266) in such a manner that when the processor identifies the input/output

device, the compact flash is, in turn, initialized and the diagnostics code is executed upon a command to run a diagnostics boot routine (column 4 lines 58-67).

As in claim 8, Aguilar discloses the removable nonvolatile memory device containing the diagnostics code is resident external to the motherboard, and the diagnostics code on the removable nonvolatile memory device is adapted to be upgraded or amended free of taking the system out of service (Fig. 1 #262, compact flash card external to the motherboard; system 200 is interpreted as not being dependent upon the compact flash card in order to operate, column 3 line 44 through column 4 line 57).

* * *

As in claim 13, Orr teaches the limitations of claim 11 which included nonvolatile memory. However, Orr fails to teach that the nonvolatile memory device is a compact flash. Aguilar teaches of a compact flash (column 4 lines 58-67).

It would have been obvious to a person skilled in the art at the time the invention was made to have replaced the ROM component of Orr with the compact flash component of Aguilar et al. This would have been obvious because Aguilar et al discloses replacing ROM with compact flash (column 4 lines 63-65).

* * *

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As in claim 14, Orr teaches the limitations of claim 11 which included nonvolatile memory. However, Orr fails to teach that the nonvolatile memory device is a personal computer (PC) card. Aguilar teaches of a compact flash card (column 4 lines 58-67, which is interpreted as a type of PC card).

It would have been obvious to a person skilled in the art at the time the invention was made to have replaced the ROM component of Orr with the compact flash component of Aguilar et al. This would have been obvious because Aguilar et al. discloses replacing ROM with compact flash (column 4 lines 63-65).

* * *

As in claim 15, Orr teaches the limitations of claim 11 which included diagnostics code. However, Orr fails to teach that the file server would remain operational during an upgrade. Aguilar et al. teaches of a method to keep the system operational during an upgrade (system 200 is interpreted as not being dependent upon the compact flash card in order to operate, column 3 line 44 through column 4 line 57).

It would have been obvious to a person skilled in the art at the time the invention was made to have replaced the ROM component of Orr with the compact flash component of Aguilar et al., allowing continuous file server operation during upgrading. This would have been obvious because Aguilar et al. discloses replacing ROM with compact flash (column 4 lines 63-65).

* * *

As in claim 17, Orr teaches the limitations of claim 16 which included diagnostics code. However, Orr fails to teach that the file server would remain operational during an upgrade. Aguilar et al. teaches of a method to keep the system operational during an upgrade (system 200 is interpreted as not being dependent upon the compact flash card in order to operate, column 3 line 44 through column 4 line 57).

It would have been obvious to a person skilled in the art at the time the invention was made to have replaced the ROM component of Orr with the compact flash component of Aguilar et al., allowing continuous file server operation during upgrading. This would have been obvious because Aguilar et al. discloses replacing ROM with compact flash (column 4 lines 63-65).

As in claim 18, Aguilar et al. discloses a means for upgrading the diagnostics code by interfacing with the storage system through an associated input/output interface (column 5 lines 7-9, where the means for upgrading is available).

* * *

As in claim 20, Orr teaches the limitations of claim 19 which included nonvolatile memory containing diagnostics code. However, Orr fails to teach that the nonvolatile memory device is a compact flash. Aguilar teaches of a compact flash (column 4 lines 58-67).

It would have been obvious to a person skilled in the art at the time the invention was made to have replaced the ROM component of Orr with the compact flash component of Aguilar et al. This would have been obvious because Aguilar et al discloses replacing ROM with compact flash (column 4 lines 63-65).

As in claim 21, Orr discloses further instructions to save diagnostics test results and other data in a predetermined address location in the nonvolatile memory associated with the computer (test results: column 7 lines 25-27; data: column 5 line 34).

As in claim 22, Orr discloses the diagnostics boot command is initiated by a human maintenance operator (column 5 lines 59-62).

As in claim 23, Orr discloses the diagnostics boot command is initiated as an instruction in the computer readable medium upon the occurrence of a predetermined event (column 5 line 56 through column 6 line 5, where the predetermined event may be interpreted as the flag defined in the CMOS).

* * *

As in claim 28, Orr teaches the limitations of claim 24 which included nonvolatile memory. However, Orr fails to teach that the nonvolatile memory device is a personal computer

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(PC) card. Aguilar teaches of a compact flash card (column 4 lines 58-67, which is interpreted as a type of PC card).

It would have been obvious to a person skilled in the art at the time the invention was made to have replaced the ROM component of Orr with the compact flash component of Aguilar et al. This would have been obvious because Aguilar et al. discloses replacing ROM with compact flash (column 4 lines 63-65).

* * *

As in claim 29, Orr teaches the limitations of claim 24 which included nonvolatile memory. However, Orr fails to teach that the nonvolatile memory device is a compact flash. Aguilar teaches of a compact flash (column 4 lines 58-67).

It would have been obvious to a person skilled in the art at the time the invention was made to have replaced the ROM component of Orr with the compact flash component of Aguilar et al. This would have been obvious because Aguilar et al discloses replacing ROM with compact flash (column 4 lines 63-65).

As in claim 32, Orr discloses one of the partitions is designated as a maintenance log into which test results and data are stored (test results: column 7 lines 25-27; data: column 5 line 34).

As in claim 33, Aguilar et al. discloses a separate storage medium, the separate storage medium storing a boot routine (column 7 lines 2-5).

* * *

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Orr in view of Hitz et al. (U.S. Patent No. 5,963,962).

As in claim 6, Orr discloses a file server system (column 4 lines 32-34) comprising:

- a storage operating system adapted to be executed by the processor (column 5 lines 5-9);
- a removable nonvolatile memory device coupled to the system bus, the removable nonvolatile memory device containing diagnostics code for the system (column 5 lines 14-15 and 21-23, where it is possible to remove the memory);
- a set of boot instructions resident in the file server system including instructions for executing a normal boot routine upon a power-on of the system (Fig. 2, column 5 lines 17-19), and including instructions enabling the processor to identify the removable nonvolatile memory device and to load the diagnostics code into the memory in response to a command to execute a diagnostics boot routine instead of the normal boot routine (column 5 lines 56-59);
- a storage adapter coupled to the system bus (column 5 lines 2-4);
- at least one storage disk coupled to the storage adapter and containing files served by the operating system (column 5 lines 2-4); and
- a plurality of disks coupled to the storage adapter (column 5 lines 2-4).

However, Orr fails to disclose a write anywhere file layout system. Hitz et al. discloses a write anywhere file layout system (column 5 lines 35-47).

It would have been obvious to a person skilled in the art at the time the invention was made to have included a write anywhere file layout system as disclosed by Hitz et al. in the invention of Orr. This would have been obvious because the write anywhere file layout system as disclosed by Hitz et al. conserves system storage resources and preserves data integrity (column 4 lines 20-27). A write anywhere file layout storage system as disclosed by Hitz et al. adds a layer of fault tolerance to a system, similar to the inclusion of a RAID storage system as disclosed by Orr (column 5 lines 2-4). Because the invention of Orr does not limit his storage system to a RAID storage system, and the invention of Orr's functionality is not dependent on the particular type of storage system, it would have been obvious to have included a write anywhere file layout storage system in place of a RAID storage system.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paul Contino whose telephone number is (571) 272-3657. The examiner can normally be reached on Monday-Friday 7:30 am - 5:00 pm, first Fridays off.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (571) 272-3645. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-3657.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PFC

April 13, 2005



SCOTT BADERMAN
PRIMARY EXAMINER